Nuclear Chemistry

Nuclear chemistry is the study of atomic nuclei and the changes they undergo. It plays a critical role in fields such as medicine, energy production, and environmental research.

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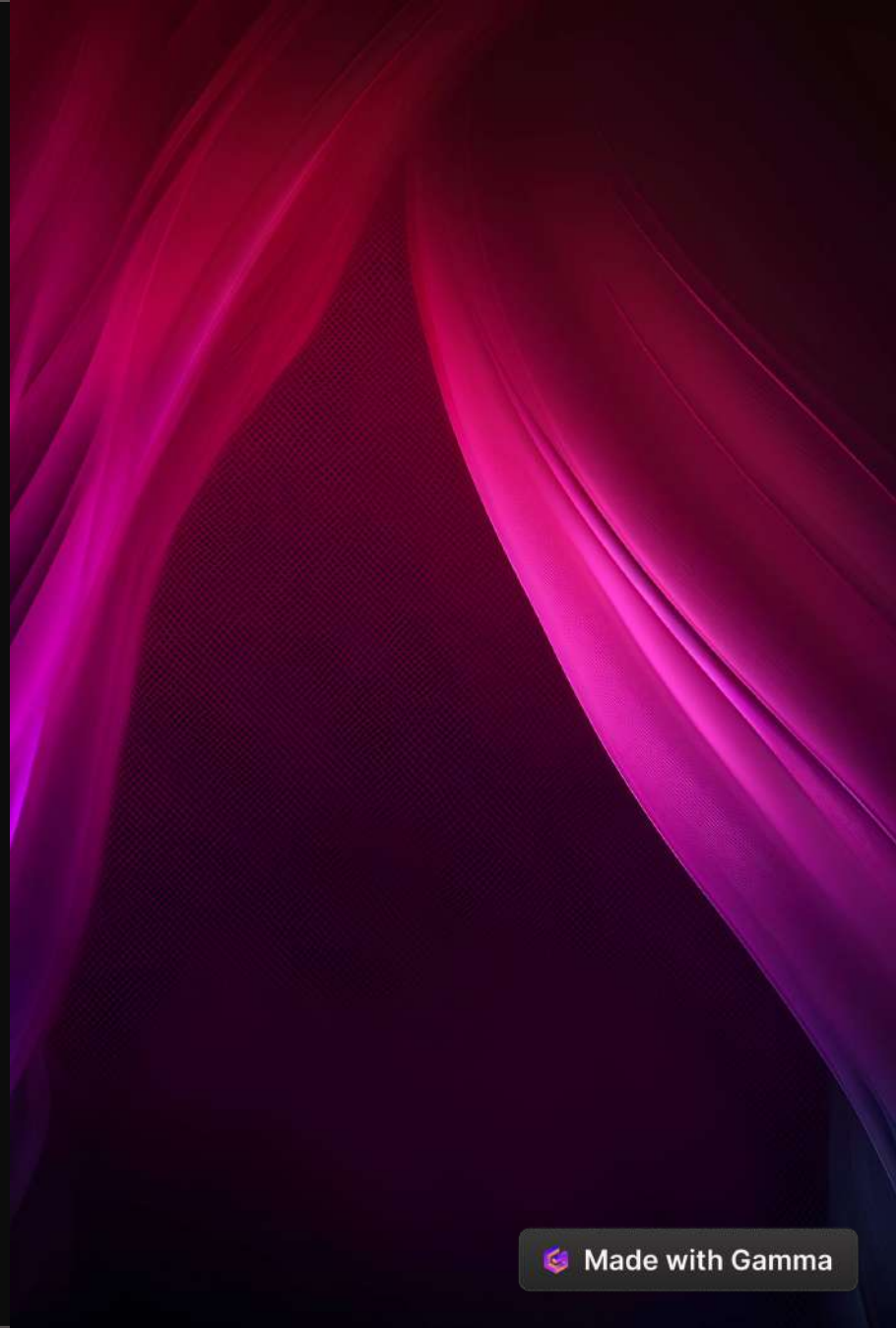


Introduction

- Definition of nuclear chemistry
- Importance of nuclear chemistry in various fields

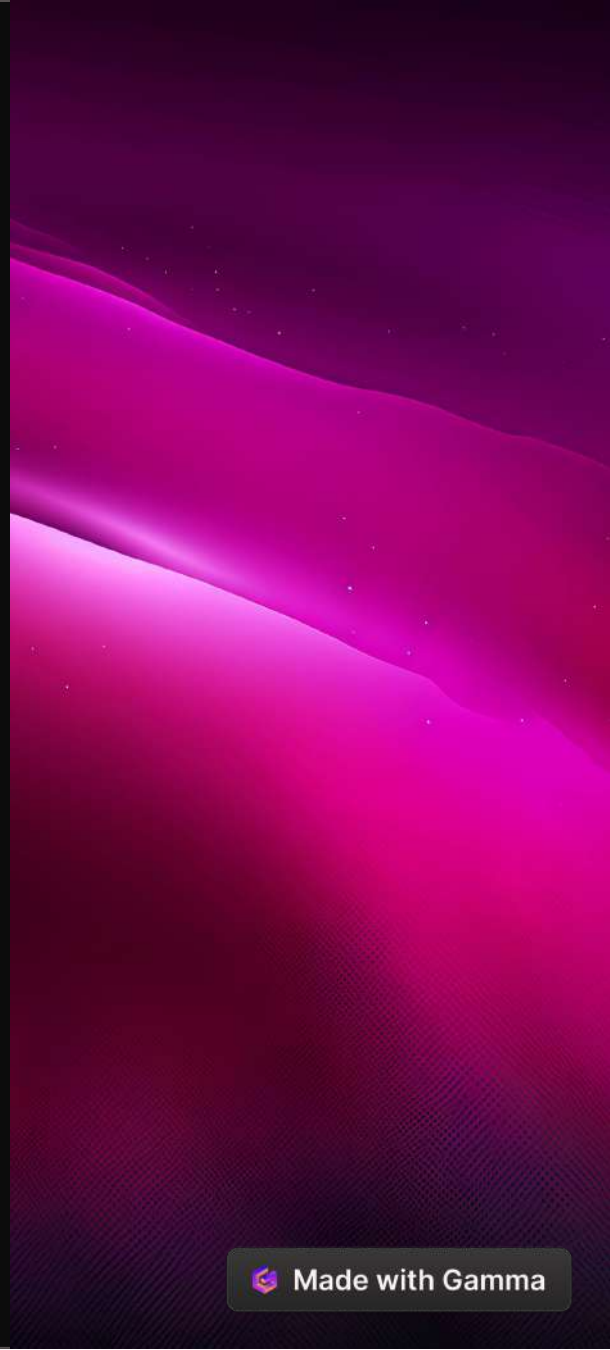
Nuclear Reactions

1 Basics of Nuclear Reactions

Nuclear reactions involve changes in atomic nuclei, including the formation or decay of isotopes.

2 Different Types of Nuclear Reactions

Examples include nuclear fission, nuclear fusion, and radioactive decay.



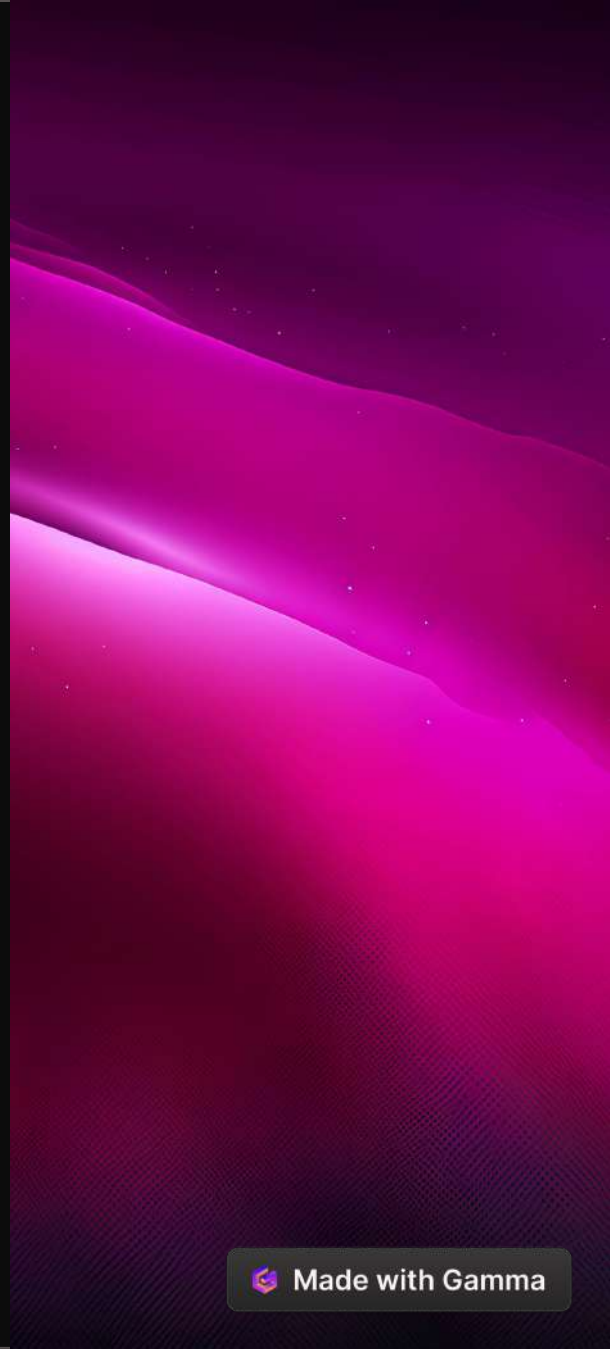
Nuclear Decay

1 Radioactive Decay

Radioactive decay is the spontaneous breakdown of atomic nuclei, emitting radiation in the process.

2 Types of Radioactive Decay

Common types include alpha decay, beta decay, and gamma decay.



Half-Life

1 Definition of Half-Life

Half-life is the time it takes for half of a radioactive substance to decay.

2 Calculation of Half-Life

Half-life can be calculated using the decay constant and the initial amount of a radioactive substance.

Nuclear Energy

1 Nuclear Fission

Nuclear fission is a process where the nucleus of an atom is split, releasing a large amount of energy.

2 Nuclear Fusion

Nuclear fusion is a process where two atomic nuclei combine to